UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/829,131	04/21/2004	James Chieh-Tsung Chen	MP0506	5418

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VIANA DI PRISCO, GERMAN

ART UNIT	PAPER NUMBER
2617	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

	Application No.	Applicant(s)
	10/829,131	CHEN ET AL.
Office Action Summary	Examiner	Art Unit	
	GERMAN VIANA DI PRISCO	2617	

-- *The MAILING DATE of this communication appears on the cover sheet with the correspondence address* --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on <u>13 July 2009</u>.

2a) ☐ This action is **FINAL**.   2b) ☒ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) <u>1-3,5-12,14-19,21-30,32-39,41-46 and 48-54</u> is/are pending in the application.

     4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) <u>1-3,5-12,14-19,21-30,32-39,41-46 and 48-54</u> is/are rejected.

7) ☐ Claim(s) _____ is/are objected to.

8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.

     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

     a) ☐ All b) ☐ Some * c) ☐ None of:

         1. ☐ Certified copies of the priority documents have been received.

         2. ☐ Certified copies of the priority documents have been received in Application No. _____.

         3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

     * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.

5) ☐ Notice of Informal Patent Application

6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1.　　A request for continued examination under 37 CFR 1.114, including the fee set

forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this

application is eligible for continued examination under 37 CFR 1.114, and the fee set

forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action

has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on

07/13/2009 has been entered.

Claim Rejections - 35 USC § 103

2.　　The text of those sections of Title 35, U.S. Code not included in this action can

be found in a prior Office action.

3.　　Claims 1, 2, 5, 6, 7, 8, 10, 11, 14, 15, 16, 28, 29, 32, 33, 34, 35, 37, 38, 41, 42

and 43 rejected under 35 U.S.C. 103(a) as being unpatentable over Shu et al. ("Shu",

United States Patent Application Publication No.: 2007/0078624 A1), in view of

Baumberger (United States Patent Application Publication No.: US 2005/0102671 A1)

and further in view of Le et al. ("Le", United States Patent No.: US 7,464,138 B2).

　　　　Consider claims 1, 10, 28 and 37, Shu discloses a memory (inherently taught by

wireless network devices e.g. PC1) to store an image comprising a plurality of virtual

machines and only one multi-tasking operating system (e.g. Windows, Linux, Unix,

Windows, Maces, etc.), wherein each of the plurality of virtual machines comprises a

wireless network application (e.g. Access Point client, Access Point station, broadband

gateway, wireless bridge) to execute on the multi-tasking operating system (paragraphs

[0021], [0028],and [0035]);a processor to execute the virtual machines (inherently

taught by wireless devices e.g. PC1, which can be a laptop, PDA or cell

phone)(paragraphs [0021] and [0029]); and a port (in Network Interface Card)

comprising a physical-layer device to communicate with the network, and a media

access controller to communicate with the physical-layer device and the processor

(paragraph [0022]).

However Shu does not expressly disclose wherein the memory comprises one of

a plurality of virtual machine queues for each of the plurality of virtual machines and a

processor queue for the processor that is separate from the plurality of virtual machine

queues,

wherein the processor stores data to be processed in the processor queue for members

of the plurality of virtual machines being executed by the processor,

wherein each respective one of the plurality of virtual machines creates a copy in a

respective one of the plurality of virtual machine queues of the data in the processor

queue when the processor is executing the respective one of the plurality of virtual

machines, and

wherein when the processor resumes executing a first of the plurality of virtual

machines after executing a second of the plurality of virtual machines, the first of the

plurality of virtual machines copies the data from the respective one of the plurality of

virtual machine queues for the first of the plurality of virtual machines to the processor queue.

In the same field of endeavor Baumberger discloses a plurality of virtual machines and a plurality of virtual machine queues (queues 104a and 104b for virtual machines 101a and 101b respectively, see Fig. 2 and paragraphs [0020] and [0021]).

Therefore it would have been obvious to a person of ordinary skill in the art, at the time the invention was made, to use virtual machine queues as disclosed by Baumberger in the wireless device of Shu in order to run multiple virtual machines on one platform at the same time.

Nonetheless Baumberger does not expressly disclose that the processor queue is separate from the plurality of virtual machines queues, or that each of the virtual machines copies the data in the processor queue to a respective virtual machine queue and when the processor resumes executing a first virtual machine after executing a second virtual machine, the first virtual machine copies the data from the virtual machine queue to the processor queue.

In the same field of endeavor Le discloses a queue management system applicable to any suitable common queue (e.g. a processor queue) and common queue server (e.g. processor). Le further discloses a plurality of systems 14 (e.g. system A and system B which would correspond to the claimed plurality of virtual machines) that share a common queue in the common queue server 20 (corresponding to the claimed processor queue). According to Le's disclosure a "Mirror Queue", i.e. a copy of the

shared queue is maintained in the local storage of each application in each of the

systems (see abstract and Col 1, lines 16-58).

Therefore it would have been obvious to a person of ordinary skill in the art, at

the time the invention was made, to use the queue management system as taught by

Le in the system of Shu as modified by Baumberger in order to prevent loss of data.

Consider claims 2, 11, 29 and 38 and as applied to claims 1, 10, 17, 28, 37 and

44 respectively above, Shu further discloses a wireless network device which is

compliant with a standard selected from the group consisting of IEEE standards 802.11,

802.11 a, 802.11 b, 802.11g and 802.11 n (paragraphs [0005]-[0006]).

Consider claims 5, 14, 32 and 41, and as applied to claims 1, 10, 28 and 37

respectively above Shu further discloses that at least one of the wireless network

applications is selected from the group consisting of a wireless network access point; a

wireless network client; a wireless network point-to-point bridge; a wireless network

multi-point bridge; and a wireless network repeater (paragraphs [0026], [0028], [0031],

and [0035]).

Consider claims 6 and 33, and as applied to claims 1 and 28 respectively above,

Shu further discloses a plurality of virtual machine device drivers to communicate with

the virtual machines; and a media access controller device driver to communicate with

the virtual machine device drivers and the media access controller (paragraph [0022]).

Consider claims 7, 15, 34 and 42, and as applied to claims 1, 10, 17, 28, 37 and

44 respectively above, Shu further discloses an input device to select one or more of

the virtual machines; wherein the processor executes the virtual machines selected by

the input device (the input device is inherently taught by the wireless network device, which can be a laptop, a PDA or a cell phone) (paragraph [0021]).

Consider claims, 8, 16, 35 and 43 and as applied to claims 1, 10, 17, 28, 37 and 44, Shu further discloses that the processor executes a plurality of the virtual machines concurrently (e.g. the Soft AP capable device can be configured to emulate at any given time both a client station and a LAN Access Point) (paragraph [0021]).

4.   Claims 17, 21, 44 and 48 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rothman et al. ("Rothman", United States Patent No.: US 7,290,178 B2), and further in view Le et al. ("Le", United States Patent No.: US 7,464,138 B2).

Consider claims 17 and 44 Rothman discloses a wireless network device for communicating with a network comprising (processor system 600 may include a wireless network adapter, Col.8, II. 41-45): a memory (604) to store an image comprising a plurality of virtual machines (114 and 116) and only one multi-tasking operating system, wherein each of the virtual machines comprises a wireless network application to execute on the multi-tasking operating system; a plurality of virtual machines device drivers, wherein each of the virtual machines directly communicates with a respective one of the virtual machine drivers (virtual machine 114 communicates with device driver 130 and virtual machine 116 communicates with transaction profiler 134 which my be a device driver, Fig 1 and Col.2, II. 54-559 and Col.3, II. 27-28); a processor (104, 602) to execute the virtual machines; and a bus (614) to communicate

with the processor and the network (Figs. 1 and 6, and col. 1, line 66-col.2, line 53 and col.8, lines 28-51).

However Rothman does not expressly disclose that the processor queue is separate from the plurality of virtual machines queues, or that each of the virtual machines copies the data in the processor queue to a respective virtual machine queue and when the processor resumes executing a first virtual machine after executing a second virtual machine, the first virtual machine copies the data from the virtual machine queue to the processor queue.

In the same field of endeavor Le discloses a queue management system applicable to any suitable common queue (e.g. a processor queue) and common queue server (e.g. processor). Le further discloses a plurality of systems 14 (e.g. system A and system B which would correspond to the claimed plurality of virtual machines) that share a common queue in the common queue server 20 (corresponding to the claimed processor queue). According to Le's disclosure a "Mirror Queue", i.e. a copy of the shared queue is maintained in the local storage of each application in each of the systems (see abstract and Col 1, lines 16-58).

Therefore it would have been obvious to a person of ordinary skill in the art, at the time the invention was made, to use the queue management system as taught by Le in the system of Rothman in order to prevent loss of data.

Consider claims 21 and 48 and as applied to claims 17 and 44 respectively above, Rothman further discloses a bus interface driver to communicate with the virtual

machine device drivers and the bus (device drivers 130 and transaction profiler 134)

(Fig.1, col.2, lines 54-61 and col.3, lines 4-10 and 25-32).

5.   Claims 3, 12, 30 and 39 are rejected under 35 U.S.C. 103(a) as being

unpatentable over Shu et al. ("Shu", United States Patent Application Publication No.:

2007/0078624 A1) as applied to claims 1, 10, 17, 28, 37 and 44 respectively above, in

view of Baumberger (United States Patent Application Publication No.: US

2005/0102671 A1), and of Le et al. ("Le", United States Patent No.: US 7,464,138 B2),

and further in view of Miyauchi (United States Patent Application Publication No.: US

2002/0089875 A1).

        Consider claims 3, 12, 30 and 39 and as applied to claims 1, 10, 17, 28, 37 and

44 respectively above, Shu as modified by Baumberger and further modified by Le does

not explicitly disclose the claimed limitations.

        In the same field of endeavor Miyauchi discloses a volatile memory (RAM 26);

and a memory controller (25) to create a copy of the image from the non-volatile

memory to the volatile memory; wherein the processor executes the virtual machines

(firmware stored in nonvolatile memory) from the volatile memory (Fig. 3 and paragraph

[0041]).

        Therefore it would have been obvious to a person of ordinary skill in the art at the

time the invention was made, to execute a program as disclosed by Miyauchi in the

wireless software access point of Shu as modified by Baumberger and further modified

by Le to reduce the size of the device.

6.   Claims 9 and 36 rejected under 35 U.S.C. 103(a) as being unpatentable over

Shu et al. ("Shu", United States Patent Application Publication No.: 2007/0078624 A1),

in view of Baumberger (United States Patent Application Publication No.: US

2005/0102671 A1), and of Le et al. ("Le", United States Patent No.: US 7,464,138 B2),

and further in view of Gurevich (United States Patent Application Publication No.: US

2005/0174962 A1).

        Consider claims 9 and 36 and as applied to claims 1 and 28 respectively above,

Shu as modified by Baumberger and further modified by Le discloses the virtual

machines comprising a wireless network access point virtual machine and a wireless

network client virtual machine; wherein the processor executes the wireless network

access point virtual machine and the wireless network client virtual machine

concurrently (the Soft AP capable device can be configured to emulate at any given

time both a client station and a LAN Access Point) (paragraph [0021]).

        However Shu as modified by Baumberger and further modified by Le does not

explicitly disclose that the wireless network client virtual machine comprises

        a first virtual wireless port to communicate with the port, and

        a first virtual bridge to communicate with the first virtual wireless port;

        and wherein the wireless network access point virtual machine comprises a

second virtual wireless port to communicate with the port, a virtual distribution service

port to communicate with the first virtual bridge, and a second virtual bridge to

communicate with the second virtual wireless port and the virtual distribution service port.

In the same field of endeavor Gurevich discloses that the wireless network client virtual machine comprises a first virtual wireless port to communicate with the port (e.g. virtual network interface 36), and a first virtual bridge (IP layer routing 460 to communicate with the first virtual wireless port;

and wherein the wireless network access point virtual machine comprises a second virtual wireless port (e.g. virtual network interface 38)to communicate with the port, a virtual distribution service port to communicate with the first virtual bridge, and a second virtual bridge to communicate with the second virtual wireless port and the virtual distribution service port (wireless distribution service WDS 42) (Fig.3 and paragraphs [0034]-[0036]).

Therefore it would have been obvious to a person of ordinary skill in the art at the time the invention was made, to incorporate the teachings of Gurevich in the system of Shu as modified by Baumberger and further modified by Le in order to communicate simultaneously with different networks.

7.   Claims 19 and 46 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rothman et al. ("Rothman", United States Patent No.: US 7,290,178 B2) as applied to claims 17and 44 respectively above, in view Le et al. ("Le", United States Patent No.: US 7,464,138 B2), and further in view of Miyauchi (United States Patent Application Publication No.: US 2002/0089875 A1).

Consider claims 19 and 46 and as applied to claims 17, and 44 respectively above, Rothman as modified by Le does not explicitly disclose the claimed limitations.

In the same field of endeavor Miyauchi discloses a volatile memory (RAM 26); and a memory controller (25) to create a copy of the image from the non-volatile memory to the volatile memory; wherein the processor executes the virtual machines (firmware stored in nonvolatile memory) from the volatile memory (Fig. 3 and paragraph [0041]).

Therefore it would have been obvious to a person of ordinary skill in the art at the time the invention was made, to execute a program as disclosed by Miyauchi in the system of Rothman as modified by Le to reduce the size of the device.

8.   Claims 18, 22, 23, 24, 25, 26, 45, 49, 50, 51, 52 and 53 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rothman et al. ("Rothman", United States Patent No.: US 7,290,178 B2) as applied to claims 17and 44 respectively above, in view Le et al. ("Le", United States Patent No.: US 7,464,138 B2), and further in view of Shu et al. ("Shu", United States Patent Application Publication No.: 2007/0078624 A1).

Consider claims 18 and 45, an as applied to claims 17 and 44 respectively above, Rothman as modified by Le does not specifically disclose the claimed limitation.

In the same field of endeavor Shu discloses a wireless network device which is compliant with a standard selected from the group consisting of IEEE standards 802.11, 802.11 a, 802.11 b, 802.11g and 802.11 n (paragraphs [0005]-[0006]).

Therefore it would have been obvious to a person of ordinary skill in the art at the time the invention was made to use a standard as disclosed by Shu in the system of Rothman as modified by Le in order to decrease the complexity of wireless LAN configuration and maintenance.

Consider claims 22 and 49, and as applied to claims 17 and 44 respectively above, Rothman as modified by Le does not explicitly disclose the claimed limitations.

In the same field of endeavor Shu discloses a physical-layer device to communicate with the network; and a media access controller to communicate with the physical-layer device and the bus (paragraph [0022]).

Therefore it would have been obvious to a person of ordinary skill in the art at the time the invention was made to have a physical-layer device and a media access controller as disclosed by Shu in the system of Rothman as modified by Le in order to decrease the complexity of wireless LAN configuration and maintenance.

Consider claims 23 and 50 and as applied to claims 22 and 49, Rothman discloses a first bus interface driver to communicate with the virtual machine device drivers and the bus; a second bus interface driver to communicate with the bus (device drivers 130) (Fig.1, col.2, lines 54-61 and col.3, lines 4-10); and Shu discloses a media access controller device driver to communicate with the second bus interface driver and the media access controller (paragraph [0022]).

Consider claims 24 and 51, and as applied to claims 17 and 44 respectively above, Rothman as modified by Le does not disclose the claimed limitation.

In the same field of endeavor Shu discloses that at least one of the wireless network applications is selected from the group consisting of a wireless network access point; a wireless network client; a wireless network point-to-point bridge; a wireless network multi-point bridge; and a wireless network repeater (paragraphs [0026], [0028], [0031], and [0035]).

Therefore it would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate the teachings of Shu in the system of Rothman as modified by Le in order to decrease the complexity of wireless LAN configuration and maintenance.

Consider claims 25 and 52, and as applied to claims 17 and 44 respectively above, Rothman as modified by Le does not disclose the claimed limitation.

In the same field of endeavor Shu discloses an input device to select one or more of the virtual machines; wherein the processor executes the virtual machines selected by the input device (the input device is inherently taught by the wireless network device, which can be a laptop, a PDA or a cell phone) (paragraph [0021]).

Therefore it would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate the teachings of Shu in the system of Rothman as modified by Le in order to decrease the complexity of wireless LAN configuration and maintenance.

Consider claims 26 and 53, and as applied to claims 17 and 44 respectively above, Rothman as modified by Le does not disclose the claimed limitation.

In the same field of endeavor Shu discloses that the processor executes a plurality of the virtual machines concurrently (e.g. the Soft AP capable device can be configured to emulate at any given time both a client station and a LAN Access Point) (paragraph [0021]).

Therefore it would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate the teachings of Shu in the system of Rothman as modified by Le in order to decrease the complexity of wireless LAN configuration and maintenance

9.   Claims 27 and 54 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rothman et al. ("Rothman", United States Patent No.: US 7,290,178 B2) as applied to claims 17and 44 respectively above, in view Le et al. ("Le", United States Patent No.: US 7,464,138 B2), and further in view Gurevich (United States Patent Application Publication No.: US 2005/0174962 A1).

Consider claims 27 and 54 and as applied to claims 17 and 44 respectively above, Rothman as modified by Le does not explicitly disclose that the wireless network client virtual machine comprises a first virtual wireless port to communicate with the port, and a first virtual bridge to communicate with the first virtual wireless port; and wherein the wireless network access point virtual machine comprises a second virtual wireless port to communicate with the port, a virtual distribution service port to

communicate with the first virtual bridge, and a second virtual bridge to communicate

with the second virtual wireless port and the virtual distribution service port.

In the same field of endeavor Gurevich discloses that the virtual machines

comprising a wireless network access point virtual machine and a wireless network

client virtual machine; wherein the processor executes the wireless network access

point virtual machine and the wireless network client virtual machine concurrently

(paragraphs [0035]-[0036]); wherein the wireless network client virtual machine

comprises a first virtual wireless port to communicate with the port (e.g. virtual network

interface 36), and a first virtual bridge (IP layer routing 460 to communicate with the first

virtual wireless port; and wherein the wireless network access point virtual machine

comprises a second virtual wireless port (e.g. virtual network interface 38) to

communicate with the port, a virtual distribution service port to communicate with the

first virtual bridge, and a second virtual bridge to communicate with the second virtual

wireless port and the virtual distribution service port (wireless distribution service WDS

42) (Fig.3 and paragraphs [0034]-[0036]).

Therefore it would have been obvious to a person of ordinary skill in the art at the

time the invention was made, to incorporate the teachings of Gurevich in the system of

Rothman as modified by Le in order to communicate simultaneously with different

networks.

Response to Arguments

10.   Applicant's arguments with respect to claims 1-3, 5-12, 14-19, 21-30, 32-39, 41-

46 and 48-54 have been considered but are moot in view of the new ground(s) of

rejection.

Conclusion

11.   The prior art made of record and not relied upon is considered pertinent to

applicant's disclosure. Cibrario Bertolotti et al. (Pub No.; US 2006/0123416 A1)

discloses managing virtual machines in a physical processing machine. Cota-Robles et

al. (Pub. No.: US 2004/0010788 A1) discloses swapping virtual machines between a

storage device and processor memory. Venables (Pub. No.: US 2005/0138197 A1)

discloses virtual queues and queue mirroring. Zhong et al. (Pub. No.: US 2004/0081119

A1) discloses elimination loss of packets by an access point during handoffs by creating

an image queue.

12.

        Any response to this Office Action should be **faxed to** (571) 273-8300 **or mailed**

to:

> Commissioner for Patents
> P.O. Box 1450
> Alexandria, VA 22313-1450

> **Hand-delivered responses** should be brought to

> Customer Service Window
> Randolph Building
> 401 Dulany Street
> Alexandria, VA 22314

        Any inquiry concerning this communication or earlier communications from the

examiner should be directed to GERMAN VIANA DI PRISCO whose telephone number

is (571)270-1781. The examiner can normally be reached on Monday through Friday

7:30-5:00 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Rafael Perez-Gutierrez can be reached on (571) 272-7915. The fax phone

number for the organization where this application or proceeding is assigned is 571-

273-8300.

Information regarding the status of an application may be obtained from the

Patent Application Information Retrieval (PAIR) system. Status information for

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USPTO Customer Service Representative or access to the automated information

system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/German Viana Di Prisco/
Examiner, Art Unit 2617

/Rafael Pérez-Gutiérrez/
Supervisory Patent Examiner, Art Unit 2617

September 17, 2009